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Distributed Network Experiment Emulation

Thursday, 7 November 2019 09:55 (7 minutes)

With the ever growing complexity of networks, researchers have to rely on test-beds to be able to fully assess the quality of their propositions. In the meanwhile, Mininet offers a simple yet powerful API, the goldilocks of network emulators. We advocate that the Mininet API is the right level of abstraction for network experiments. Unfortunately it is designed to be run on a single machine. To address this issue we developed a distributed version of Mininet – Distrinet – that can be used to perform network experiments in any Linux-based testbeds, either public or private. To properly use testbed resources and avoid over- commitment that would lead to inaccurate results, Distrinet uses optimization techniques that determine how to orchestrate the experiments within the testbed. Its programmatic approach, its ability to work on various testbeds, and its optimal management of resources make Distrinet a key element to reproducible research.

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